

## **Facts About Brownfields Overhead #1**

- Brownfield sites include old industrial property, old gas stations, vacant warehouses, abandoned residential buildings, and even former dry cleaning businesses.
- In a recent U.S. Conference of Mayors survey of 231 cities, 210 cities estimated that they collectively had more than 21,000 brownfield sites.
- The General Accounting Office of the federal government estimates that there are over 450,000 brownfield properties in the United States.
- Examples of brownfield toxins include phenols and methane gas from construction debris, mercury from old industrial buildings, petroleum at former gas stations, asbestos and lead based paint.

## **Facts About Brownfields Overhead #2**

- Only 12 percent of responsible parties pay for cleanup of brownfields. This is often because companies no longer exist at the time pollution is discovered or becomes a problem.
- Brownfields lead to increased costs for police and other social services and cost communities jobs, lost wages, and tax revenue.
- Redeveloping a brownfield can cost a business or industry millions of dollars more than developing a new greenfield.
- Although many brownfields are found in urban areas, they can exist in any size of community.
- Examples of rural brownfields include closed sawmills, paper mills, and abandoned mines.
- Redeveloping or reusing brownfields can save greenspaces and natural areas. It can also help slow urban sprawl.

**Source:**

*Fast Facts.* Environmental Media Services Website. 24 April 2001. 26 April 2002  
<<http://www.ems.org/brownfields/facts.html>>.

*Social, Environmental, and Economic Concerns.* Environmental Media Services. 24  
April 2001. 26 April 2002  
<[http://www.ems.org/brownfields/social\\_economic.html](http://www.ems.org/brownfields/social_economic.html)>.

## **Examples of Brownfields Overhead #3**

**Site:** Former Pontiac Steel Company

**Location:** Springfield Township, Oakland County

**Description:** Steel production ended on the 8.8-acre site in 1990. The community fears that 40 years of steel-curing residue remains on the land. The site is a weed-covered lot. Randy Hosler would like to use the land for a new car dealership. He is afraid, however, that the land may be contaminated.

**Source:**

Martindale, Mike. "Brownfields Under Attack." The Detroit News Website. 18 Sept. 2001. 9 April 2002 <<http://detnews.com/2001/oakland/0109/18/d08-296713.htm>>.

## **Examples of Brownfields Overhead #4**

**Site:** Stan's Trucking Incorporated

**Location:** Between School Road and Hamlin Road  
in Rochester Hills

**Description:** This land was first used for farming. Later it was mined for sand and gravel. After the mining operation closed, the pits were used for dumping of trash. Landfill operations on the property began in 1966. The pits used for landfill were below the water table. Liners were not installed in the pits before the disposal of waste began. Contamination was found in 1975 in water taken from residential wells northeast of the landfill. The Michigan Department of Natural Resources ordered the landfill closed. In 1976, a new operator installed a new clay liner under the landfill and reopened it. This operation ended in 1981. In 1982 the landfill was covered with a two-foot thick clay cap. Tests show the property is contaminated with metals and other substances.

**Source:**

*Health Consultation for Stan's Trucking Incorporated.* Michigan Department of  
Community Health and Agency for Toxic Substances and Disease Registry Website.  
26 November 1997. 9 April 2002  
<[http://www.atsdr.cdc.gov/HAC/PHA/stan/sti\\_p1.html](http://www.atsdr.cdc.gov/HAC/PHA/stan/sti_p1.html)>.

## **Examples of Brownfields Overhead #5**

**Site:** Uniroyal Site

**Location:** Along the Detroit River in Detroit near the Belle Isle Bridge

**Description:** This 44-acre site has been home to a tire factory, a stove works, and a coal gasification plant. Hidden basements and refuse pits lie beneath the surface. The remains of ruined buildings stand at one corner of the property. Abandoned in the 1980s, the City of Detroit now owns the property. Inspectors have uncovered lead, mercury, coal tars, benzene, PCBs, and many other solvents and chemicals. Some people fear that these chemicals are possibly contaminating the Detroit River. The site is valuable riverfront property but cleanup has proven to be too difficult and too costly.

**Source:**

Pearce, Jeremy. "Uniroyal's Dirty Past." Detroit News Special Report on Tainted Property. The Detroit News. 28 Jan. 2001. 26 April 2002  
<<http://detnews.com/specialreports/2001/taintedproperty/sunlead5/sunlead5.htm>>.

# Teacher Resource Sheet #1

## Online Lessons to Teach about Brownfields and Groundwater Problems

Lesson	Objectives	Where Found
Wells: A Deep Subject	<ul style="list-style-type: none"><li>• Discover and explain how a well works</li><li>• Examine a well's relationship to the water table.</li><li>• Apply principles of well placement.</li></ul>	<p><a href="http://www.epa.gov/safewater/kids/wsb/354.pdf">www.epa.gov/safewater/kids/wsb/354.pdf</a></p> <p><u>Note: at the website choose this lesson from the menu on the left.</u></p>
Deep Subjects – Wells and Ground Water	<ul style="list-style-type: none"><li>• Demonstrate knowledge about what ground water is in terms of how it exists in the ground.</li><li>• Explain how ground water moves through the soil and how it interacts with surface water.</li><li>• Demonstrate knowledge about how ground water is extracted for use as drinking water.</li></ul>	<p><a href="http://www.epa.gov/region01/students/pdfs/ww_well.pdf">www.epa.gov/region01/students/pdfs/ww_well.pdf</a></p>
A Tale of Ooze	<ul style="list-style-type: none"><li>• Construct a model of a non-lined landfill.</li><li>• Perform an experiment on the formation of leachate.</li><li>• Write a paragraph on the prevention of groundwater pollution by landfill leachate</li></ul>	<p><a href="http://www.epa.gov/safewater/kids/wsb/354.pdf">www.epa.gov/safewater/kids/wsb/354.pdf</a></p> <p><u>Note: at the website choose this lesson from the menu on the left.</u></p>
Stamp Out L.U.S.T (Leaking Underground Storage Tanks)	<ul style="list-style-type: none"><li>• Demonstrate how leaking underground storage tanks can contaminate groundwater.</li></ul>	<p><a href="http://www.epa.gov/safewater/kids/wsb/354.pdf">www.epa.gov/safewater/kids/wsb/354.pdf</a></p> <p><u>Note: at the website choose this lesson from the menu on the left.</u></p>

## Teacher Resource Sheet #2

### Water Resources from the EPA

Title	EPA Number
Drinking Water Activities for Teachers and Students	810/B-99-002
Aquifer in a Cup (Aquifer on the Go)	810/F-96-001
Build Your Own Aquifer	810/F-95-005
Build Your Own Watershed	810/F-98-003
Non-Point Source Pollution	810/F-98-001
Water Filtration	810/F-95-004
Water Purification by Evaporation and Condensation	810/F-98-001
Where Does Your Drinking Water Come From?	810/F-98-002
Ground Water and Land Use in the Water Cycle [poster - 24 X 36 inches]	813/H-95-002
Science Demonstration Projects in Drinking Water (Grades K-12)	570/9-90-007
Student Activity Sheets for Drinking Water Projects	810/F-92-003
Water: Every Living Thing Depends On It! [poster]	800/H-95-001
Water Trivia Facts	810/F-95-001

Order the above materials at: <<http://www.epa.gov/ncepihom/ordering.htm>>.

**Source:** <<http://www.epa.gov/safewater/Pubs/kids.html>>.

## **Benefits of Redeveloping Brownfields Overhead #6**

- Increase the community's tax base
- Create jobs
- Preserve open spaces
- Slow urban sprawl
- Neighborhood revitalization
- Environmental protection

**Source:**

*Recycling America's Land: A National Report on Brownfields Redevelopment, Volume III*  
.The U.S. Conference of Mayors. 2000. 9 April 2002  
<<http://www.usmayors.org/uscm/brownfields/index.html>>.



## **Obstacles to Redevelopment of Brownfields Overhead #7**

- Liability Issues
- Lack of clean up funds
- The need for environmental assessment of the properties.
- Not a high priority in the community
- High standards for cleanup
- Neighborhood conditions
- Lack of demolition funds
- Community concerns

**Source:**

*Recycling America's Land: A National Report on Brownfields Redevelopment, Volume III*  
.The U.S. Conference of Mayors. 2000. 9 April 2002  
<<http://www.usmayors.org/uscm/brownfields/index.html>>.